

What is claimed is:

1. A method for placing a computer having a random access memory (RAM) in a power suspension mode with power removed from the RAM, comprising steps of:
- 5 (a) accessing a compression utility routine;
- (b) reading contents of the RAM;
- (c) compressing the contents of RAM using the compression utility routine, resulting in a compressed version of the contents of RAM;
- 10 (d) storing the compressed version of the contents of RAM on a non-volatile storage device; and
- (e) removing power from selected components, including the RAM, to place the computer in the power suspension mode.
- 15 2. The method of claim 1 wherein the non-volatile storage device is a hard-disk drive connected to and operable by the computer.
3. The method of claim 1 wherein the steps are guided by a power management control routine included in a basic input output system (BIOS).
- 20 4. The method of claim 1 further comprising a step for identifying areas of RAM used by memory management software and storing zeros in all such areas prior to the compression step.
- 25 5. A method for saving contents of random access memory (RAM) prior to power suspension in a power managed computer system, to ensure that the computer system can be restarted at the point where activity is suspended, comprising steps of:
- (a) compressing the contents of system RAM, creating a compressed

version of system RAM;

(b) storing the compressed version of system RAM on a non-volatile storage device before removing power from system RAM.

5 ¶6. The method of claim 5 further comprising a step for storing zeros in all areas in system RAM used by memory management software prior to the step for compressing the contents of RAM.

10 ¶7. The method of claim 5 wherein the steps are managed by a power management control routine provided as a part of a basic input output system (BIOS).

15 ¶8. A power management control routine for a computer system, comprising:
a first portion configured for monitoring inputs to the computer relative to time, and for initiating power suspension after passage of a threshold time without input;
a second portion configured for saving random access memory (RAM) contents to a non-volatile storage device before power suspension is initiated; and
20 a third portion configured for compressing RAM contents before saving to the non-volatile storage device.

25 ¶9. A power management control routine as in claim 8 further comprising a fourth portion for storing zeros in all area of RAM used by memory management software before compressing RAM contents.

¶10. A power management control routine as in claim 8 wherein the non-volatile storage device is a hard disk drive.

11. A basic input output system (BIOS) having a power management control system, wherein the power management control system comprises:

5 a first portion for monitoring inputs to the computer relative to time, for initiating power suspension after passage of a threshold time without input;

a second portion configured for saving random access memory (RAM) contents to a non-volatile storage device before power suspension is initiated; and

10 a third portion configured for compressing RAM contents before saving to the non-volatile storage device.

12. A BIOS as in claim 11 further comprising a fourth portion configured for storing zeros in all RAM areas used by memory management software prior to compressing contents of RAM.

15

13. A method for placing a computer having a random access memory (RAM) in a power suspension mode with power removed from the RAM, comprising steps of:

20 (a) identifying all areas of the RAM used by memory management software;

(b) copying the contents of the RAM, except those areas identified in step (a), to a non-volatile storage device; and

(c) removing power from selected components, including the RAM, to place the computer in the power suspension mode.

25

14. A power-managed computer system having a random access memory (RAM) wherein a power management control routine monitors inputs to the computer system and initiates a power suspension mode with power removed from the RAM, the power management control routine

comprising:

a first portion configured for monitoring inputs to the computer relative to time, and for initiating power suspension after passage of a threshold time without input;

5 a second portion configured for saving random access memory (RAM) contents to a non-volatile storage device before power suspension is initiated; and

a third portion configured for compressing RAM contents before saving to the non-volatile storage device.

10

15. A power managed computer as in claim 14 further comprising a fourth portion for storing zeros in all area of RAM used by memory management software before compressing RAM contents.

16. A power-managed computer system having a random access memory (RAM) wherein a power management control routine monitors inputs to the computer system and initiates a power suspension mode with power removed from the RAM, the power management control routine comprising:

20 a first portion configured for monitoring inputs to the computer relative to time, and for initiating power suspension after passage of a threshold time without input;

a second portion for identifying areas of the RAM used by memory management software before initiating power suspension; and

25 a third portion configured for saving random access memory (RAM) contents, except those areas identified as being used by memory management software, before power suspension is initiated.